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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,929	01/15/2002	Patrick W. Mullen	1571.2039-000	3338
21005	7590	04/14/2004	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			TSIDULKO, MARK	
			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 04/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/046,929

Applicant(s)

MULLEN, PATRICK W.

Examiner

Mark Tsidulko

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Aw

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 7-17, 19-23, 25 and 26 is/are rejected.
- 7) ☒ Claim(s) 2-6, 18, 24, 27 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The submission of amendment filed on 3/1/2004 is acknowledged. At this point claims 7-18, 23 and 24 have been amended and the remaining claims left unchanged. Thus, claims 1-28 are at issue in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **1, 7, 8, 19, 20, 23, 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 2002/0145860) in view of Kim et al. (US 6,424,396).

Referring to Claim 1 Lee discloses (Fig.4) a backlight that includes a light guide plate having a first and second side, the first side includes a series of optical elements [726] and the second side includes a series of a plateaus (recesses) [721] for enhancing the brightness of the light and base planes (not indicated by numbers).

Lee discloses the instant claimed invention except for stepped plateaus substantially parallel but not coplanar with the base planes.

Kim et al. disclose (Fig.4) the stepped plateaus [22] substantially parallel but not coplanar with the base planes.

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It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the stepped plateaus of Kim et al. for the device of Lee for the purpose of enhancing the brightness of the light.

Referring to Claim 7 Lee discloses (Fig. 3) that linear optical elements include linear prisms that run the width of the sheeting.

Referring to Claim 8 Lee discloses (Fig. 3) that the linear optical elements include linear prisms having triangular prisms arranged side-by-side.

Referring to Claim 19 Lee discloses (Figs. 1, 4):

- a lighting device [714];
- a display panel [600];
- a light guide plate having a first and second side, the first side includes a series of optical elements [726] and the second side includes a series of a plateaus (recesses) [721] for enhancing the brightness of the light and base planes (not indicated by numbers) and the plateaus are not coplanar with the base planes (page 3, [0052], [0054], [0062], [0063]).

Referring to Claims 20, 26 it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Referring to Claim 23 Lee discloses (Fig.4) a backlight that includes a light guide plate having a first and second side, the first side includes a series of optical elements [726] and the second side includes a series of a plateaus (recesses) [721] for enhancing the brightness of the light and base planes (not indicated by numbers).

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Lee discloses the instant claimed invention except for stepped plateaus substantially parallel but not coplanar with the base planes.

Kim et al. disclose (Fig.4) the stepped plateaus [22] substantially parallel but not coplanar with the base planes.

It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the stepped plateaus of Kim et al. for the device of Lee for the purpose of enhancing the brightness of the light.

Claims **9, 12-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Kim et al. as applied to claim 8 and further in view of Oda et al. (US 2002/0105793).

Referring to Claim **9** Lee discloses the instant claimed invention except for top angle of the prism in a range between about 60 and 120 degrees.

Oda et al. disclose (Fig.10A) the top angle of the prism is 90 degrees (page 5, [0078]).

The prism sheet is positioned on the light guiding plate so that the apexes of the prism projections face in a direction away from the light exit surface of the light guiding plate. In this case, it is preferable that the top angle of the prism element be 90 degrees. Since the apexes of the prism projections face in a direction away from the light exit surface, a diffusion sheet is positioned between the prism sheet and the light guiding plate (like in the instant application), to lead the light which exits from the light exit surface to the front of the surface lighting device (page 5, [0078]).

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It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the prism elements of Lee with top angle 90 degrees as taught by Oda et al. in order to provide a surface of lighting device with a high brightness.

Referring to Claims **12-15** Lee discloses the instant claimed invention except for top angle of the prism in a range of between about 60 and 85 degrees, 95 and 120 degrees, 88 degrees and 89 degrees.

Oda et al. disclose (Fig.10A) the top angle of the prism is 90 degrees (page 5, [0078]).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made to provide prism with any angle listed above, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claims **10, 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Kim et al. as applied to claim **9** and further in view of Oda et al. (US 2002/0105793).

Lee discloses the instant claimed invention except for the prisms are scalene isosceles in shape.

Oda et al. disclose (Fig.10A) the top angle of the prism is 90 degrees (page 5, [0078]).

It would have been obvious to one having ordinary skill in the art, at the time the invention was that if top angle of triangle is 90 degrees the triangle is scalene isosceles in shape.

Claims **21, 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Kim et al. as applied to claim **19** and further in view of Oda et al. (US 2002/0105793).

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Lee discloses the instant claimed invention except for top angle of the prism in a range of between about 60 and 85 degrees, 95 and 120 degrees, 88 degrees and 89 degrees.

Oda et al. disclose (Fig. 10A) the top angle of the prism is 90 degrees (page 5, [0078]).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made to provide prism with any angle listed above, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claims 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Kim et al. as applied to claim 1 above, and further in view of Beeson et al. (US 5,396,350).

Lee and Oda et al. disclose the instant claimed invention except for the linear optical elements are pitched at regular intervals and include lenticular linear elements.

Beeson et al. disclose (Figs. 8, 10) the linear optical elements are pitched at regular intervals and include lenticular linear elements (micro lenses) [80]. Collimated light rays further collimated by micro lenses [80].

It would have been obvious to one having ordinary skill in the art, at the time the invention was made, to provide the linear optical elements are pitched at regular intervals and include lenticular linear elements as taught by Beeson et al. for device of Lee and Oda et al. in order to provide a more substantially collimated light source.

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Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee. This reference discloses structure of the device but do not disclose a method of forming a light collimating film.

It would have been obvious to one having ordinary skill in the art, at the time the invention was made to take the steps of apparatus above and provide a method of forming since a prior art of record teaches or suggests a light collimating film such as forming a series of linear prisms including peaks on the first side of the sheeting and forming a plurality of base planes and plateaus wherein the plateaus have an elevation different that the base planes on a second side of the sheeting with the plateaus and base planes being oriented in a parallel to the peaks of the linear prisms.

Allowable Subject Matter

Claims 2-6, 18, 24, 27, 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Referring to Claims 2, 28 the prior art of record fails to show the optical film wherein a difference between the plateau and the base plane includes an amount greater than a wavelength of visible light.

Referring to Claim 3 the prior art of record fails to show the optical film wherein a difference in height between the plateau and the base plane includes an amount in the range of between about 0.2 and about 2 microns.

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Referring to Claim 4 the prior art of record fails to show the optical film wherein the ratio of the area of the base planes to the area of the plateaus are in the range of between about one and about ten.

Referring to Claim 5 the prior art of record fails to show the optical film wherein the base planes have a width in the range of between about one and about three hundred microns.

Referring to Claim 6 the prior art of record fails to show the optical film wherein the plateaus planes have a width in the range of between about one and about fifty microns.

Referring to Claim 18 the prior art of record fails to show the linear optical elements are pitched in the range of between about 12.5 and about 6,5000 microns.

Referring to Claims 24, 27 the prior art of record fails to show the light collimating structure wherein the plateaus of the first collimating film and the plateaus of the second collimating film face each other.

Response to Arguments

Applicant's arguments filed 3/1/2004 have been fully considered but they are not persuasive.

Applicant argues that Lee does not disclose plateaus that are substantially parallel but not coplanar with the base planes.

In response, the Examiner is aware that Lee fails to disclose plateaus, hence Kim is used in 103 rejection to teach the use of the plateaus. As shown on Fig.8 of Kim an upper substrate [20] has a plurality of plateaus [22] which are parallel but not coplanar with a base planes (lower

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plane of the substrate [20]. Using of this structure allows to improve a response speed of the LCD (see Kim, col.1, line 67).

Applicant argues that Beeson et al. do not disclose plateaus that are substantially parallel but not coplanar with the base planes.

In response the Examiner would like to direct the Applicant's attention to the fact, that this reference is used to teach the use of lenticular linear elements which are claimed in claims 16 and 17.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Tsidulko whose telephone number is (571)272-2384. The examiner can normally be reached on 8 - 5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M.T.
April 8, 2004



ALAN CARIASO
PRIMARY EXAMINER